WHAT IS CLAIMED IS:

1. A method for fabricating an element containing an array of microspheres on a support, the method comprising the steps of:

a) coating a support with a coating composition to form an intermediate receiving layer, said layer having a modulus that can be modified by crosslinking;

b) allowing partial cross-linking to proceed in the intermediate layer to achieve an elastic modulus that permits partial submerging of the microspheres into the receiving layer;

c) coating on the partially cross-linked receiving layer a dispersion of microspheres in a carrier fluid;

d) allowing the microspheres to partially submerge into the intermediate layer;

e) removing the fluid medium from the suspension of microspheres; and

e) fixing the microspheres on the intermediate layer so that the element can withstand wet processing.

2. The method of claim 1 wherein said microspheres form an interface with the intermediate layer, said interface having an interfacial energy of γ_1.

3. The method of claim 1 wherein said microspheres form an interface with the fluid medium, said interface having an interfacial energy of γ_2.

4. The method of claim 1 wherein the modulus of said intermediate layer has a lower bound of 1 MPa.

5. The method of claim 1 wherein the modulus of said intermediate layer has an upper bound defined by a monotonically increasing function of the ratio of γ_1 to γ_2.

6. The method of claim 5 wherein slope of said function varies depending on number of beads per unit area and bead diameter.

7. The method of claim 5 wherein the upper bound is 19 MPa when ratio of γ_1 to γ_2 is 1 and the number of beads per cm^2 is 1000 and the bead diameter is 10 μ.

8. The method of claim 5 wherein the upper bound is 63 MPa when ratio of γ_1 to γ_2 is 2 and the number of beads per cm^2 is 1000 and the bead diameter is 10 μ.

9. The method of claim 5 wherein the upper bound is 128 MPa when ratio of γ_1 to γ_2 is 3 and the number of beads per cm^2 is 1000 and the bead diameter is 10 μ.

10. The method of claim 5 wherein the upper bound is 31 MPa when ratio of γ_1 to γ_2 is 1 and the number of beads per cm^2 is 1000 and the bead diameter is 5 μ.

11. The method of claim 5 wherein the upper bound is 22 MPa when ratio of γ_1 to γ_2 is 2 and the number of beads per cm^2 is 1000 and the bead diameter is 15 μ.

12. The method of claim 5 wherein the upper bound is 75 MPa when ratio of γ_1 to γ_2 is 4 and the number of beads per cm^2 is 1000 and the bead diameter is 15 μ.

13. The method of claim 5 wherein the upper bound is 10 MPa when ratio of γ_1 to γ_2 is 1 and the number of beads per cm^2 is 1000 and the bead diameter is 20 μ.

14. The method of claim 5 wherein the upper bound is 40 MPa when ratio of γ_1 to γ_2 is 3 and the number of beads per cm^2 is 1000 and the bead diameter is 20 μ.

15. The method of claim 5 wherein the upper bound is 125 MPa when ratio of γ_1 to γ_2 is 6 and the number of beads per cm^2 is 1000 and the bead diameter is 20 μ.

16. The method of claim 5 wherein the upper bound is 7 MPa when ratio of γ_1 to γ_2 is 3 and the number of beads per cm^2 is 10000 and the bead diameter is 10 μ.

17. The method of claim 5 wherein the upper bound is 20 MPa when ratio of γ_1 to γ_2 is 6 and the number of beads per cm^2 is 10000 and the bead diameter is 10 μ.

18. The method of claim 5 wherein the upper bound is 38 MPa when ratio of γ_1 to γ_2 is 9 and the number of beads per cm^2 is 10000 and the bead diameter is 10 μ.

19. The method of claim 5 wherein the upper bound is 2 MPa when ratio of γ_1 to γ_2 is 3 and the number of beads per cm^2 is 10000 and the bead diameter is 20 μ.

20. The method of claim 5 wherein the upper bound is 4 MPa when ratio of γ_1 to γ_2 is 6 and the number of beads per cm^2 is 10000 and the bead diameter is 20 μ.

21. The method of claim 5 wherein the upper bound is 7 MPa when ratio ofγ_1 to γ_2 is 9 and the number of beads per cm^2 is 10000 and the bead diameter is 20 μ.

22. An element comprising randomly fixed microspheres, the element comprising:

a) a support; on which is disposed

b) a water-insoluble, crosslinked layer; and

(c) microspheres partially submerged in the crosslinked layer;

wherein the microspheres, upon deposition on the layer, have surfaces exposed above the crosslinked layer, such exposed surfaces having probes attached that are capable of interacting with analytes applied to the element.

23. The element of claim 22 wherein the crosslinkable layer contains gelatin.

24. The element of claim 22 wherein the microspheres comprise polystyrene or polymethylmethacrylate.

25. The element of claim 22 wherein the support comprises glass paper, metal or polymer.

26. The element of claim 22 wherein the microspheres have a diameter of 1 to100μ.

27. The element of claim 22 wherein the microspheres have a diameter of 5 to 20μ.

28. The element of claim 22 wherein the number of micropheres per cm^2 is between 1 and 1,000,000.

29. The element of claim 22 wherein the number of micropheres per cm^2 is between 100 and 100,000.

30. The element of claim 22 wherein the number of micropheres per cm^2 is between 1000 and 10,000.

31. The element of claim 22 wherein the microspheres are color coded.

32. The element of claim 31 wherein the color code identifies the probe on the surface of the microsphere.

33. The element of claim 22 wherein the probe is protein or nucleic acid.

34. An element produced by a method comprising the steps of:

a) coating a support with a coating composition to form an intermediate receiving layer, said layer having a modulus that can be modified by crosslinking;

b) allowing partial cross-linking to proceed in the intermediate layer to achieve an elastic modulus that permits partial submerging of the microspheres into the receiving layer;

c) coating on the partially cross-linked receiving layer a dispersion of microspheres in a carrier fluid;

d) allowing the microspheres to partially submerge into the intermediate layer;

e) removing the fluid medium from the suspension of microspheres; and

f) fixing the microspheres on the intermediate layer so that the element can withstand wet processing.